



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/769,594	01/30/2004	Ahmed K. Ezzat	200315891-1	8589
22879 7590 05/25/2011 HEWLETT-PACKARD COMPANY Intellectual Property Administration 3404 E. Harmony Road Mail Stop 35 FORT COLLINS, CO 80528				
EXAMINER GYORFI, THOMAS A				
ART UNIT 2435		PAPER NUMBER		
NOTIFICATION DATE 05/25/2011		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

JERRY.SHORMA@HP.COM

ipa.mail@hp.com

laura.m.clark@hp.com

Office Action Summary

Application No.

10/769,594

Applicant(s)

EZZAT, AHMED K.

Examiner

Thomas Gyorfi

Art Unit

2435

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-940)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1 and 3-26 remain for examination.

Response to Arguments

2. Applicant's arguments filed 4/28/11 have been fully considered but they are not persuasive. First, contrary to Applicant's assertion, claim 26 was quite clearly rejected in the previous Office Action, as Gong teaches that limitation at col. 11, line 40-67 (see the Office Action of 3/2/11, page 6, last paragraph: "Regarding claim 26"). Therefore, Applicant's arguments protesting the finality of this Office Action are displaced and non-persuasive, and the finality of this Action is proper.
3. Regarding the rejections under 35 USC 101, Applicant argues:

Applicant notes that the instant Office Action rejects Claims 17-25 under the assertion that it is within the scope of the disclosure that Claims 17-25 are directed toward a transitory propagating signal *per se*, and are thus non-statutory. However, Applicant respectfully submits that the specification describes only statutory embodiments of a computer readable medium and is silent with respect to any non-statutory embodiments of a computer readable medium. Therefore, Applicant respectfully submits that Claims 17-25, when reasonably interpreted consistent with the specification, are directed toward statutory subject matter, and thus overcome the instant rejection under 35 U.S.C. § 101.

Examiner disagrees. The one and only teaching provided by the instant specification regarding computer-readable media is found on page 16 of the instant specification, paragraph 0070, reprinted with emphasis by the Examiner:

[0073] FIGS. 3A and 3B depict a flowchart 300 for enforcing protection in a computer system by decoupling protection from privilege according to embodiments of the present invention. Although specific operations are disclosed in flowchart 300, such operations are exemplary. That is, embodiments of the present invention are well suited to performing various other operations or variations of the operations recited in flowchart 300. It is appreciated that the operations in flowchart 300 may be performed in an order different than presented, and that not all of the operations in flowchart 300 may be performed. All of, or a portion of, the embodiments described by flowchart 300 can be implemented using computer-readable and computer-executable instructions

which reside, for example, in computer-usable media of a computer system or like device.

Clearly, the instant application only recites that the invention may reside on a computer-usable medium; it says nothing regarding the nature of said computer-usable medium, which is exactly the issue that the USPTO directive quoted by the Applicant is designed to address. Examiner utterly fails to see how this one recitation could possibly be read to exclude signal embodiments, as alleged by the Applicant. Examiner respectfully solicits the Applicant to either produce that portion of the instant specification (as originally written) that further limits "computer-usable medium" to the statutory embodiments, or amend the claims as initially suggested by the Examiner to read only on "non-transitory" computer readable media.

4. In response to Applicant's arguments traversing the rejections of the claims under 35 USC 103(a), the Examiner notes that Applicant has made an assumption that those of ordinary skill in the art would recognize as fundamentally flawed: Applicant has naively assumed that in order for one to have the ability to load code from a remote resource on a network, said code must be an instance of an object-oriented [OO] class (see the amendment of 4/28/11, page 11, 5th paragraph; page 15, last paragraph; page 16, last paragraph; etc.). This is incorrect, as those of ordinary skill in the art were fully aware of alternative means to achieve the equivalent effect; one such non-limiting example would be through the use of Remote Procedure Calls (RPCs), as evidenced by the Marshall reference enclosed herein. For example, programmers of ordinary skill in the art had long had the ability to write programs in C (a non-object oriented programming language) to pass code and data objects between a client and a server in

much the same way that the classes disclosed by Gong's Java embodiment operated, as per the various citations made by the Applicant in his amendment.

Although the Applicant has clearly read the Gong reference, his repetitious analysis betrays only the most cursory, superficial understanding of Gong's disclosure. The problem that Gong was trying to solve was that there are inherent security issues in allowing code from remote sources to operate unfettered on one's machine; and previous attempts to place security restrictions on remote code, such as by sandboxing (e.g. col. 2, lines 1-30) were felt to be sub-optimal, thus leading Gong to try his approach of establishing protection domains. The problem with Applicant's assumption that Gong's use of protection domains implies that the code being managed must be object-oriented in nature (amendment, pages 12-16) is that it logically follows that non-object oriented code would have none of the security issues identified by Gong in columns 1 & 2; if that were the case, then an easier solution from what Gong discloses would be to simply not use Java or any object-oriented language to write one's code in the first place. Note that at no point in Gong's description of the problems that he solves (columns 1 & 2, Ibid) does he ever limit them to being pertinent only to object-oriented code; to the contrary, people of ordinary skill in the art would recognize the security issues in remote code execution would exist regardless of what programming language the remote code was written in. And as noted previously, while Gong clearly prefers Java as his language of choice – Java being well known as an object-oriented language wherein by design every program is a series of one or more classes – nevertheless it does not follow that because his specific example teaches the use of

classes, that the only permissible variations of his improved protection for remote code must also be classes from an object oriented language. The fact that Gong chose Java dictated his use of classes in the preferred embodiment of his invention; not the other way around, as alleged by the Applicant. Gong teaches that all manner of variations of his invention are possible (col. 4, lines 15-20; and col. 13, lines 23-30); and since those of ordinary skill in the art knew that remote code is not inherently limited to object oriented classes, the mere fact that this is possible is enough to suggest Applicant's soft limitation "wherein said portions of code are not required to be associated with one or more object oriented classes".

Claim Rejections - 35 USC § 101

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
6. Claims 17-25 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims are directed toward a "computer-usable medium", which, absent a specific definition in the instant specification, is understood to encompass such ephemeral media as optical or electromagnetic signals on carrier waves. These transitory types of computer-usable media are non-statutory; however the Examiner respectfully suggests that the rejections can be overcome by amending the claims to recite a "non-transitory" computer-usable media, thus limiting the scope of the claims to statutory subject matter.

Claim Rejections - 35 USC § 103

7. Claims 1 and 3-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gong (U.S. Patent 6,125,447) in view of "The C Book – Structures" (hereinafter, "GBDirect").

Regarding claims 1, 12, and 17:

Gong discloses a method, computer system and computer readable medium for providing flexible protection by decoupling protection from privilege, comprising: enabling receipt of information describing two or more types of protection (col. 8 line 40 – col. 9, line 37); enabling receipt of information describing a relationship between said two or more types of protection and portions of code that are executed in a same privilege level of the computer system, where said relationship is not required to be linear (Ibid; and col. 9, lines 40-53); and enabling the association of said information describing two or more types of protection and said information describing said relationship with said portions of code (Ibid, and col. 10, lines 57-62) wherein a first portion of code allowing a second portion of code to access the first portion of code does not depend on the second portion of code allowing the first portion of code to access the second portion of code (col. 12, line 40 – col. 13, line 10). Per claim 12, Gong further discloses a memory unit and processor (col. 4, lines 25-45).

Gong's disclosure is limited to explicitly discussing the preferred embodiment wherein all the pertinent software is implemented as Java objects, Java being a well-known object-oriented programming language with classes (col. 6, line 45 – col. 7, line

60). However, Gong merely *assumes* that the object oriented requirement is true (Ibid, particularly col. 6, lines 65-66); yet his preferred embodiment is illustrative but not restrictive, and variations as to the specifics of how his invention is implemented are permitted (col. 13, lines 23-30). In that vein, those of ordinary skill in the art would have known that other programming languages predating the object-oriented programming phenomenon nevertheless allowed for data objects and methods to manipulate them; perhaps the most well known example is found in the C programming language, with its use of "structs" as illustrated by GBDirect (the entire article, particularly *inter alia* its discussion on using structures and functions to manipulate said structures to implement such well-known data objects as linked lists and trees).¹ It would have been obvious to use C – or any other non-object-oriented programming language - as the basis for the software in the Gong invention in lieu of Java as Gong preferably discloses, as the substitution of one well-known programming language for another would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Examiner takes Official Notice that the C programming language can be used to implement remote code in much the same manner as the Java language used in Gong's preferred embodiment (see the Marshall reference for support).

¹ Examiner notes that an object-oriented class, such as found in C++, is a superset of the struct data type from C (see Sebesta, page 423, "10.5.4.1 Encapsulation"; and Barr, page 146, 2nd last paragraph).

Regarding claims 2, 13, and 18:

Gong further discloses wherein said relationship is user-definable (col. 8, lines 45-63, noting that the ability for a user to set permissions on at least one's home directory and the contents therein was known in the art).

Regarding claims 3, 14, and 19:

Gong further discloses wherein said portions of code are domains and each of said types of protections is defined in part by at least one or more domain attributes (col. 9, lines 40-55).

Regarding claims 4 and 20:

Gong further discloses wherein said one or more domain attributes includes a domain identifier that specifies a unique value for a particular domain (col. 9, lines 5-20).

Regarding claims 5 and 21:

Gong further discloses wherein said one or more domain attributes includes a Private Key that specifies a unique value that a particular domain must use for protecting each user that concurrently uses a particular domain (col. 9, lines 5-37).

Regarding claims 6 and 22:

Gong further discloses wherein said one or more domain attributes includes a SharedCode Key that specifies a value that a particular domain must use to access code associated with another domain (col. 9, lines 25-37).

Regarding claims 7 and 23:

Gong further discloses wherein said one or more domain attributes includes a SharedData Key that specifies a value that a particular domain must use to access data associated with another domain (Ibid).

Regarding claims 8 and 24:

Gong further discloses wherein said one or more domain attributes includes a AllowOthers Key that specifies a value that a particular domain must use to access code associated with another domain in conjunction with said particular domain performing cross-domain switching to said other domain (col. 9, lines 25-37; col. 10, lines 27-40).

Regarding claims 9 and 25:

Gong further discloses wherein said one or more domain attributes includes a AccessOthers Key that specifies a value that a particular domain must use to request access of code associated with a particular domain on behalf of another domain (col. 9, lines 25-37; col. 10, lines 1-17).

Regarding claim 26:

Gong further discloses wherein said second portion of code is allowed to access said first portion of code after a third portion of code accesses said second portion of code and wherein said third portion of code is not required to access said first portion of code (col. 11, lines 40-67).

Regarding claims 10 and 15:

Gong discloses a method and computer system for providing flexible protection by decoupling protection from privilege, comprising: detecting a request from a first portion of code to access a second portion of code, wherein said first and second portions of code are executed in a same privilege level of said computer system (col. 9, lines 54-67; col. 11, lines 40-65); determining whether said first portion of code is allowed to access said second portion of code based on information describing two or more types of protection and also based on information describing a relationship between said two or more types of protection, wherein said relationship is not required to be linear (col. 8, line 40 – col. 9, line 37); if said relationship specifies that said first portion of code may access said second portion of code, then allowing said first portion of code to access said second portion of code (col. 12, lines 54-67); else not allowing said first portion of code to access said second portion of code (*Ibid*). Per claim 15, Gong further discloses a memory unit and processor (col. 4, lines 25-45).

Gong's disclosure is limited to explicitly discussing the preferred embodiment wherein all the pertinent software is implemented as Java objects, Java being a well-known object-oriented programming language with classes (col. 6, line 45 – col. 7, line 60). However, Gong merely *assumes* that the object oriented requirement is true (*Ibid*, particularly col. 6, lines 65-66); yet his preferred embodiment is illustrative but not restrictive, and variations as to the specifics of how his invention is implemented are permitted (col. 13, lines 23-30). In that vein, those of ordinary skill in the art would have known that other programming languages predating the object-oriented programming

phenomenon nevertheless allowed for data objects and methods to manipulate them; perhaps the most well known example is found in the C programming language, with its use of "structs" as illustrated by GBDirect (the entire article, particularly *inter alia* its discussion on using structures and functions to manipulate said structures to implement such well-known data objects as linked lists and trees). It would have been obvious to use C – or any other non-object-oriented programming language - as the basis for the software in the Gong invention in lieu of Java as Gong preferably discloses, as the substitution of one well-known programming language for another would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Examiner takes Official Notice that the C programming language can be used to implement remote code in much the same manner as the Java language used in Gong's preferred embodiment (see the Marshall reference for support).

Regarding claims 11 and 16:

Gong further discloses wherein said information describing said two or more types of protection and said information describing said relationships are associated with said portions of code and wherein the method further comprises retrieving said information describing said two or more types of protection and said information describing said relationships (col. 12, lines 10-40).

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas Gyorfi whose telephone number is (571)272-3849. The examiner can normally be reached on 10:00am - 6:30pm Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached on (571) 272-3859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TAG
5/13/11

/HOSUK SONG/
Primary Examiner, Art Unit 2435